

IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier version and listings.

Claim 1. (currently amended): A linked data display method for displaying data items managed with given linkages thereamong, comprising the steps of:

displaying data items included within a similar level of linkage position simultaneously in a substantially same size; and

displaying first data items, and second data items linked to ~~said~~ the first data items, which are not included within the similar level of linkage position mutually distinguishably in different sized determined according to a distance of a linkage between the first and the second data items,

wherein the data items represent time-series data ~~accumulated~~ picked up time-sequentially, and displayed so that the distance of a linkage between the displayed first and second data items corresponds to an interval from ~~an accumulated~~ a pick-up time ~~[[fo]]~~ of the first data items to ~~an accumulated~~ a pick-up time of the second data items.

Claims 2. - 4. (cancelled).

Claim 5. (currently amended): A time-series data display method for displaying accumulated time-series data items, comprising the steps of:

displaying ~~[[a]]~~ first data items associated with a first time in which said first data items ~~have~~ has been ~~created~~ picked up, in a first size; and

displaying ~~[[a]]~~ second data items associated with a second time ~~which is~~  
~~contiguous to said~~ following the first time and in which ~~said the~~ second data items have ~~has~~  
been ~~created~~ picked up, in a second size different from the first size, so that a change of  
size between ~~said~~ the first and second sizes corresponds to a temporal direction between  
~~said the~~ first time and the second time.

Claim 6. (currently amended): A time-series data display method according  
to claim 5, wherein ~~said the~~ distinguishable display is such that the display screen for ~~said~~  
the second data items is displayed with a smaller size than one for ~~said the~~ first data items.

Claim 7. (currently amended): A time series data display method according  
to claim 6, wherein ~~said the~~ first data items are displayed at an outermost position in a  
display screen, and ~~said the~~ second data items are displayed inside ~~said the~~ first data items  
with a display area thereof made smaller.

Claim 8. (currently amended): A time-series data display method according  
to claim 7, wherein third data items associated with a time contiguous to the time of ~~said~~  
the second data items are retrieved, and ~~said the~~ third data items are displayed inside ~~said~~  
the second data items with a display area thereof made smaller.

Claim 9. (currently amended): A time-series data display method according  
to claim 5, wherein a display of each date is limited to a given number of data items, and

wherein, when the number of data items exceeds ~~said~~ the given number, ~~said~~ the data items are classified in units of a finer date and displayed distinguishably.

Claim 10. (currently amended): A time-series data display method according to claim 8, wherein, when zoom-in is designated for a screen display, the display positions of ~~said~~ the first to third data items are shifted outward and the display areas thereof are made larger.

Claim 11. (currently amended): A time-series data display method according to claim 10, wherein, when ~~said~~ the zoom-in is continued for a designated period of time, ~~said~~ the first data items are moved out of a display screen, and new data associated with a date contiguous to a date of data displayed at an innermost position is retrieved and displayed at ~~said~~ the innermost position.

Claim 12. (currently amended): A time-series data display method according to claim 10, wherein, when zoom-out is designated for a screen display, the display positions of ~~said~~ the first to third data items are shifted inward and the display areas thereof are made smaller.

Claim 13. (currently amended): A time-series data display method according to claim 12, wherein, when ~~said~~ the zoom-out is continued for a designated period of time, data displayed at an innermost position is moved out of a display screen, and new data associated with a date contiguous to a date of data displayed at an outermost

position is retrieved and displayed at an outermost position is retrieved and displayed at ~~said~~ the outermost position.

Claim 14. (currently amended): A time-series data display method according to claim 12, wherein, when the ~~said~~ zoom-in or zoom-out is designated in a screen, a speed of shifting display positions is varied depending on a designated position in ~~said~~ the screen.

Claim 15. (original): A time-series data display method according to claim 5, wherein graphics such as rings or squares representing dates associated with displays are nested and displayed together with representations of data items.

Claim 16. (currently amended): A time-series data display method according to claim 15, wherein ~~said~~ the nested display is realized by arranging ~~said~~ the graphics such as rings or squares representing dates associated with displays concentrically in units of a given date, and then displaying data items orderly in ~~said~~ the graphics.

Claim 17. (currently amended): A time-series data display method according to claim 15, wherein ~~said~~ the graphics such as rings or squares representing dates associated with displays are displayed in different colors associated with ~~said~~ the dates.

Claim 18. (currently amended): A time-series data display method according to claim 16, wherein ~~said~~ the data items are positioned in ~~said~~ the graphics at random.

Claim 19. (currently amended): A time-series data display method according to claim 18, wherein ~~said~~ the random positions are specified at the time of data registration.

Claim 20. (currently amended): A time-series data display method according to claim 5, wherein ~~said~~ the accumulated time-series data items include data items accumulated in one-to-one correspondence to dates of creation of data files, data items accumulated in one-to-one correspondence to dates of correction of files, and data items accumulated in one-to-one correspondence to designated dates registered by a user.

Claim 21. (canceled).

Claim 22. (currently amended): An information processing system for displaying accumulated time-series data items, comprising:

a storage means for storing data ~~accumulated~~ picked up in one-to-one correspondence to times; and

a displaying means for displaying [[a]] first data items of a first time in which ~~said~~ the first data item has been ~~created~~ picked up, in a first size and [[a]] second data items of a second time ~~which is contiguous to said~~ following the first time and in

which ~~said~~ the second data items have ~~has~~ been ~~created~~ picked up, in a second size different from the first size, so that a change of size between the first and second sizes corresponds to a temporal direction between ~~said~~ the first and second times.

Claim 23. (currently amended): An information processing system according to claim 22, wherein said displaying means displays a display screen for ~~said~~ the data items associated with a time contiguous to ~~said~~ the desired time with a smaller size than a display screen for ~~said~~ the data items ~~for~~ of the desired time according to an elapsed time.

Claim 24. (currently amended): An information processing system according to claim 23, wherein said displaying means displays ~~said~~ the data items of ~~said~~ the desired time at an outermost position in a display screen, and displays ~~said~~ the data items of a time contiguous to ~~said~~ the desired time inside ~~said~~ the data items of ~~said~~ the desired date with a display area therefore made smaller according to an elapsed time.

Claim 25. (currently amended): An information processing system according to claim 22, wherein said displaying means includes a display limiting means for limiting a display of each time to a given number of data items, and a display dividing means that when the number of data items exceeds ~~said~~ the given number, classifies ~~said~~ the data items in units of a finer time and displays ~~said~~ the data times mutually distinguishably.

Claim 26. (currently amended): An information processing system according to claim 25, wherein said storage means includes a subdividing and accumulating means for subdividing a data accumulation unit into finer units of ~~a finer~~ time in the event that the number of data items should exceed ~~said~~ the given number, and then accumulating data items.

Claim 27. (original): An information processing system according to claim 24, further comprising a zoom designation means for use in designating zoom-in or zoom-out for a screen display, and a zoom control means that, when zoom-in is designated, shifts the display positions of data items outward so as to increase the display areas thereof, and that when zoom-out is designated, shifts the display positions of data items inward so as to decrease the display areas thereof.

Claim 28. (currently amended): An information processing system according to claim 27, wherein, when zoom-in is designated, said zoom control means moves ~~said~~ the data items of ~~said~~ the desired time out of a display screen, retrieves new data items associated with a time contiguous to a time of data items displayed at an innermost position, and displays new data items at ~~said~~ the innermost position, and when zoom-out is designated, said zoom control means moves ~~said~~ the data items displayed at ~~said~~ the innermost position out of a display screen, retrieves new data items associated with a time contiguous to a time of data items displayed at an outermost position, and displays new data items at ~~said~~ the outermost position.

Claim 29. (currently amended): An information processing system according to claim 27, wherein said zoom designation means includes a designation input means for making a designation in a screen, and said zoom control means varies a speed of shifting display positions depending on a designated position in ~~said~~ the screen.

Claim 30. (currently amended): An information processing system according to claim 22, wherein said displaying means includes a means for displaying graphics such as rings or squares representing times associated with displays concentrically in units of a given time, and a means for displaying data items orderly in ~~said~~ the graphics and wherein ~~said~~ the graphics such as rings or squares representing times associated with displays are nested and displayed together with representations of data items.

Claim 31. (currently amended): An information processing system according to claim 30 , wherein said displaying means displays ~~said~~ the graphics such as rings or squares representing times associated with displays in different colors associated with ~~said~~ the times.

Claim 32. (currently amended): An information processing system according to claim 30, wherein said displaying means positions data items in ~~said~~ the graphics at random.



Claim 33. (currently amended): An information processing system according to claim 32, wherein said storage means determines ~~said~~ the random positions at the time of data registration.

Claim 34. (previously presented): An information processing system according to claim 22, wherein said stored time-series data items include data items stored in one-to-one correspondence to times of creation of data files, data items stored in one-to-one correspondence to times of correction of files, and data items stored in one-to-one correspondence to designated times registered by a user.

Claims 35. - 109. (cancelled).

Claim 110. (currently amended): A computer program product comprising a computer usable medium having computer readable program code means for displaying data items managed with given linkages thereamong, said computer program product including:

computer readable program code means for displaying data items included within a similar level of linkage position simultaneously in a substantially same size; and

computer readable program code means for displaying first data items, and second data items linked to ~~said~~ the first data items, which are not included within the similar level of linkage position, mutually distinguishably in different sizes determined according to a distance of a linkage between the first and second data,

wherein the data items represent time-series data ~~accumulated~~ picked up time-sequentially, and displayed so that the distance of a linkage between the displayed first and second data items corresponds to an interval from ~~an accumulated~~ a pick-up time of the first data items to ~~an accumulated~~ a pick-up time of the second data items.

Claim 111. (previously presented): A computer program product according to Claim 110, the computer usable medium further having data linked to be used by said computer readable program code means.

Claim 112. (currently amended): A computer program product comprising a computer usable medium having computer readable program code means for displaying accumulated time-series data items, said computer program product including:

computer readable program code means for displaying ~~[[a]]~~ first data items associated with a first time in which ~~said the~~ first data items have ~~has~~ been ~~created~~ picked up, in a first size and ~~[[a]]~~ second data items associated a second time ~~which is contiguous~~ to ~~said following the~~ first time and in which ~~said the~~ second data items have ~~has~~ been ~~created~~ picked up, in a second size different from the first size, so that a change of size between the first and second sizes corresponds to a temporal direction between ~~said the~~ first and second times.

Claim 113. (currently amended): A computer program product according to claim 112, further including computer readable program code means for zooming in ~~said the~~ first and second data items by shifting data in a direction of ~~said the~~ second data items

to ~~said~~ the first data items and making a display area larger, and for zooming out ~~said~~ the first and second data items by shifting data in a direction of ~~said~~ the first data items to ~~said~~ the second data items and making the display area smaller.

Claim 114. (currently amended): A computer program product according to claim 112, ~~wherein~~ the computer usable medium further having time-series data to be used by said computer readable program code means.

Claims 115. - 124. (cancelled).

Claim 125. (currently amended): An information processing apparatus for displaying data item managed with given linkages thereamong, comprising:

a first displaying means for displaying data items included within a similar level of linkage position simultaneously in a substantially same size; and

a second displaying means for displaying first data items, and second data items linked to said first data items, which are not included within the similar level of linkage position, mutually distinguishable in different sizes determined according to a distance of a linkage between the first and second data items,

wherein the data items represent time-series data ~~accumulated~~ picked up time-sequentially, and displayed so that the distance of a linkage between the displayed first and second data items corresponds to an interval from ~~an accumulated~~ a pick-up time of the first data items to ~~an accumulated~~ a pick-up time of the second data items

Claim 126. (currently amended): An information processing apparatus according to claim 125, wherein ~~said~~ the data items are displayed with a plurality of stepped sizes according to distances of linkages among a plurality of levels.

Claim 127. (cancelled).

Claim 128. (currently amended): An information processing apparatus according to claim 125, wherein ~~said~~ the data items represent hierarchical data managed hierarchically and are displayed by regarding a depth in a hierarchy as type distance of a linkage.

Claim 129. (previously presented): A time series data display method according to claim 5, wherein new data items on the temporal direction are displayed in relatively large size while old data items on the temporal direction are displayed in relatively small size.

Claim 130. (previously presented): A time series data display method according to claim 5, wherein data items on a perimeter of a screen are displayed in relatively large size while data items on a center of the screen are displayed in relatively small size.

Claim 131. (previously presented): An information processing system according to claim 22, wherein said display means displays new data items on the temporal

direction in relatively large size while displaying old data items on the temporal direction in relatively small size.

Claim 132. (previously presented): An information processing system according to claim 22, wherein said display means displays data items on a perimeter of a screen in relatively large size while displaying data items on a center of the screen in relatively small size.

Claim 133. (previously presented): A computer program producing according to claim 112, wherein a new data item on the temporal direction is displayed in relatively large size while old data items on the temporal direction are displayed in relatively small size.

Claim 134. (previously presented): A computer program product according to claim 112, wherein data items on a perimeter of a screen are displayed in relatively large size while data items on a center of the screen are displayed in relatively small size.